

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Canceled)
2. (Previously Presented) A heat exchanger according to claim 15, wherein the connecting channels comprise straight bores each crossing at least two tube bores.
3. (Canceled)
4. (Previously Presented) A heat exchanger according to claim 15, wherein the plugs are detachable, the tube bores at the top face and the plugs are provided with corresponding screw thread.
5. (Canceled)
6. (Currently Amended) A heat exchanger, comprising:
 - a) a shell having a shell-sided supply and a shell-sided discharge through which a first medium under pressure can flow;
 - b) a tube plate fixed to the shell, the tube plate extending generally in a plane and including:
 - i) a back face
 - ii) a top face,
 - iii) a plurality of supply tube bores and a plurality of discharge tube bores extending substantially transversely to the plane of the tube plate from the back face to the top face, and each tube bore extends through the back face and through the top face, each tube bore having a first diameter segment adjacent to the top face, the first diameter segment having a constant diameter, and a second diameter segment spaced between the back face and the top face, the second diameter segment having a diameter less than the diameter of the first diameter segment,

the tube bores are sealed with plugs that extend through the top face, the plugs comprise a body part, a sealing member, and a clamping member, wherein the clamping member is attached to the body part and the sealing ring is arranged between the clamping member and the body part;

iv) at least two connecting channels located in the plane of the tube plate and extending generally transversely to the supply tube bores and the discharge tube bores, a first one of the connecting channels crossing at least a first plurality of the supply tube bores whereby the first plurality of supply tube bores are in flow communication with the first connecting channel, and a second one of the connecting channels crossing at least a first plurality of the discharge tube bores whereby the first plurality of discharge tube bores are in flow communication with the second connecting channel; and

v) a tube-sided supply in flow communication with the first connecting channel and a tube-sided discharge in flow communication with the second connecting channel; and

c) a nest of tubes extending at least partly within the shell, each tube having a supply side connected to a respective one of the supply tube bores and a discharge side connected to a respective one of the discharge tube bores.

7. (Canceled)

8. (Previously Presented) A heat exchanger according to claim 6, wherein the plugs are detachably disposed within the supply tube bores and the discharge tube bores, the tube bores at the top face and the plugs are provided with corresponding screw thread.

9. (Currently Amended) A heat exchanger, comprising:

a) a shell having a shell-sided supply and a shell-sided discharge through which a first medium under pressure can flow;

b) a tube plate fixed to the shell, the tube plate extending generally in a plane and including:

i) a back face

- ii) a top face,
- iii) a plurality of tube bores extending substantially transversely to the plane of the tube plate from the back face to the top face, each tube bore extending through the back face and through the top face, the tube bores are sealed with plugs that extend through the top face, the plugs comprise a sealing member, a body part having a recess formed in an outer surface thereof and a bore formed therein ~~extending~~ that extends along a portion of a length of the body part, and a clamping member, wherein the clamping member is coupled to the body part via the bore of the body part, and the sealing member is arranged in the recess between the body part and the clamping member;
- iv) at least one connecting channel located in the plane of the tube plate and extending generally transversely to the tube bores, the connecting channel crossing at least a first plurality of the tube bores whereby the first plurality of tube bores are in flow communication with the connecting channel; and
- c) a nest of tubes extending at least partly within the shell, each tube being connected to a respective tube bore.

10. (Canceled)

11. (Previously Presented) A heat exchanger according to claim 9, wherein the plugs are detachably disposed within the tube bores, the tube bores at the top face and the plugs are provided with corresponding screw thread.

12. (Currently Amended) A tube plate for use in a heat exchanger, comprising:

- a) a back face,
- b) a top face,
- c) a plurality of tube bores extending substantially transversely to the back and top faces of the tube plate from the back face to the top face, each tube bore extends through the back face and through the top face, the tube bores are sealed with plugs that extend through the top face, the plugs comprise a body part, a sealing member, and a clamping member, wherein the body part includes an open end and a closed end and the

clamping member is attached to the body part in the open end, and the sealing ring is arranged between the clamping member and the body part;

d) at least two connecting channels extending generally parallel to the back face and top face of the tube plate and extending generally transversely to the tube bores, a first one of the connecting channels crossing a first plurality of the tube bores whereby the first plurality of tube bores are in flow communication with the first connecting channel, and a second one of the connecting channels crossing a second plurality of the tube bores whereby the second plurality of tube bores are in flow communication with the second connecting channel; and

e) a tube-sided supply in flow communication with the first connecting channel and a tube-sided discharge in flow communication with the second connecting channel.

13. (Canceled)

14. (Previously Presented) A tube plate according to claim 12, wherein the plugs are detachably disposed within the tube bores, the tube bores at the top face and the plugs are provided with corresponding screw thread.

15. (Currently Amended) A heat exchanger, comprising:

(a) a shell designed as a pressure vessel having a shell-sided supply and a shell-sided discharge through which a first medium under pressure can flow;

(b) a nest of tubes extending at least partly within the shell having a tube-sided supply and a tube-sided discharge through which a second medium can flow in heat exchanging contact with the first medium under pressure;

(c) a tube plate fixed to the shell, extending generally in a plane, the tube plate comprising a flat body, a back face, a top face, and a plurality of tube bores,

(i) the tube bores extending substantially transversely to the plane of the tube plate, from the back face to the top face,

(ii) the tube bores are designed to be continuous,

(iii) the tube bores located at the top face are sealed with plugs, the plugs comprise a body part and a clamping member, wherein the body part includes a recess

formed in an outer surface adjacent to an end of the body part and the clamping member is attached to the body part,

(iv) each of the tubes is separately connected with the tube-sided supply or the tube-sided discharge in the tube bores,

(v) the number of tube bores is equal to the number of tubes,

(d) a connecting channel wherein each of the tubes is separately connected with the tube-sided supply or the tube-sided discharge via the connecting channel, wherein the connecting channel is in the plane of the tube plate and crosses the tube bores, wherein the connecting channel includes a ~~cylindrical~~ circular cross-section having a diameter greater than a diameter of the tube bores.

16. (Currently Amended) A heat exchanger according to claim 15, wherein a sealing ring is arranged in the recess between the clamping member and the body part.

17. (Currently Amended) A heat exchanger according to claim 16, wherein a support member is arranged in the recess between the clamping member and the body part.

18. (Canceled)

19. (Currently Amended) A heat exchanger according to claim [[18]] 6, wherein a support member is arranged between the clamping member and the body part.

20. (Canceled)

21. (Currently Amended) A heat exchanger according to claim [[20]] 9, wherein a support member is arranged between the clamping member and the body part.

22. (Canceled)

23. (Currently Amended) A tube plate according to claim [[22]] 12, wherein a support member is arranged between the clamping member and the body part.